

Appl. No.: 10/543,029
Amdt. dated October 24, 2007
Reply to Office Action of May 24, 2007

Amendments to the Drawings:

A replacement sheet attached to this paper replaces the sheet that previously included FIG. 4. FIG. 4 has been amended to remedy an objection raised against the drawings with regard to whether an inner edge cited in the claims is shown. FIG. 4 has been amended merely to add the reference numeral “112A,” appearing now near the center of the drawing, and a lead line from the reference numeral to the inner edge of the passageway 112. Prior to this amendment, the inner edge of the passageway was illustrated, without a reference numeral, and would be discernible to one of ordinary skill in the art to which the claimed invention pertains. An amendment herein made to the specification reflects this reference numeral and demonstrates the correspondence of the inner edge of the passageway as previously described in the written specification with the inner edge previously illustrated in the drawings. Thus, Applicant submits that no new matter has been added by this amendment.

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REMARKS IN RESPONSE TO THE OFFICE ACTION

This amendment is responsive to the Office Action dated May 24, 2007. The Office Action raises objections against the drawings with regard to the term “inner edge” found in Claims 1 and 14, and against the specification with regard to the phrase “in the light of” found in line 22 of page 11. The Office Action furthermore raises an objection against Claims 14-24 with regard to “passageway (A)” that should read “passageway (112).” Regarding the patentability of the claims in view of cited references: Claims 1, 4, 6-10 and 13 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,756,146, to Rouse (“the Rouse patent”); Claims 2, 5, 14, and 16-22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Rouse patent; and Claims 11, 12, 23, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Rouse patent in view of U.S. Patent No. 5,761,816, to Morabit et al. (“the Morabit patent”). Claims 3 and 15 are indicated as allowable if rewritten in independent form.

Applicant respectfully requests reconsideration of the claims in view of the amendments already set forth herein and in view of the Remarks set forth in the following, in which certain portions are underlined to place emphasis on patentable aspects.

Objection Toward the Drawings

The objection toward the drawings with regard to the term “inner edge” has been addressed by an amendment made to FIG. 4 by way of a replacement sheet as described on page 7 of this paper. Applicant respectfully submits that the objection toward the drawings is remedied.

Objection Toward the Written Specification

The objections toward line 22 of page 11 with regard to the phrase “in the light of” has been addressed by an amendment made herein by way of a replacement paragraph as described on page 2 of this paper. Applicant respectfully submits that the objection toward the specification is remedied.

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Objections Toward Claims 14-24

Objections raised against Claims 14-24, with particular regard to “passageway (A)” as was previously recited in Claim 14, have been addressed by an amendment herein made according to the suggestion by the Examiner. Claim 14, according to the amendment, now recites “passageway (112)” as suggested. Applicant respectfully submits that the objection toward these claims is remedied.

Claims Rejections Under 35 U.S.C. § 102(b) and § 103(a)

(Regarding Claims 1-13)

Claims 1, 4, 6-10 and 13 are rejected as being anticipated by the Rouse patent. Claims 2 and 5 are rejected as being unpatentable over the Rouse patent. Claims 11 and 12 are rejected as being unpatentable over the Rouse patent in view of the Morabit patent. Claim 1, as amended herein, relates to a cutting head including a passageway for a cutter string. The head is characterized in that the passageway extends along an axis that is spaced a distance from an axis of rotation. This feature is illustrated in the present application at least in FIG. 4, wherein the passageway 112 extends along the axis A, which is spaced a distance D from the axis of rotation at the center C of the cutting head. This feature represents a distinction at least by which Claim 1 is patentable over the Rouse and Morabit patents.

The Rouse patent illustrates, in FIG. 4, a head 10 including passages 14 and 16 having arcuate shapes as described in line 4 of column 4 in the specification of the Rouse patent. The cutting line 2 in the Rouse patent is routed through the arcuate passages 14 and 16 and passes across lands 18 and 20 defined by a continuous circular circumferential recess 22 (FIGS. 2, 3, and 5) as described in lines 62-68 of column 3 and lines 1-3 of column 4 of the specification. Therefore, the arcuate passages of the Rouse patent cannot be construed to extend along an axis because an arcuate passage or circular circumferential recess can tangentially touch an axis but cannot extend along an axis.

The Morabit patent is directed more toward the structure of a cutting string than toward string passages defined by a cutting head. Nonetheless, FIG. 2 of the Morabit patent appears to

show a cutting string winding circumferentially within the illustrated head. While the eyelet 4 may arguably be construed as a passageway, it can only be arguably construed as a radial passageway. Note that the string 3 passing through the eyelet clearly extends along a radial axis that intersects the axis of rotation at the center of the shaft 2. Any geometric extension of the eyelet would intersect the axis of rotation and would therefore not be spaced a distance from the axis of rotation. Therefore, the Morabit patent cannot be construed to show any passageway extending along an axis that is spaced a distance from an axis of rotation.

The remarks found on Page 4 of the Office Action, regarding whether the shape of a passageway depends upon a cutter string, are respectfully refuted. As is known to those of ordinary skill in the art to which the claimed invention pertains, a typical cutting string is flexible and the shape thereof is therefore affected by the architecture of a cutting head and the dynamic forces brought upon the string when in use. Therefore, the passageway (for a cutter string) defined by a cutting head depends upon the construction of the cutting head and not upon a cutting string. Thus, the shape of a passageway can be associated with an inventive concept in an invention relating to a cutting head.

In summary, the Rouse patent, the Morabit patent, and their combination fail to disclose and fail to render obvious a string passageway that extends along an axis that is spaced a distance from an axis of rotation of a cutting head. For at least these reasons, Claim 1, and Claims 2-13 that depend directly or indirectly therefrom, and all patentable over the Rouse and Morabit Patents.

Allowable Subject Matter
(Regarding Claims 14-24)

Claim 15 was subject to an objection but was indicated as having allowable subject matter and would therefore be patentable if rewritten in independent form. Claims 14 and 16-24 were rejected on various grounds in view of the Rouse and Morabit patents. However, independent Claim 14, upon which Claims 16-24 depend, has been amended to include the allowable subject matter previously included in Claim 15, which has now been canceled. Accordingly, Applicant respectfully submits that Claim 14, and Claims 16-24 are all allowable.

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Conclusion

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



Brian MacDonald
Registration No. 54,288

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

ELECTRONICALLY FILED USING THE EFS-WEB ELECTRONIC FILING SYSTEM OF THE UNITED STATES PATENT & TRADEMARK OFFICE ON OCTOBER 24, 2007.